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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEVEN R. MILLER, JAMES W. GRANT,
GREGORY D. PAVUK, KENNETH G. LANG,
ROD EHRLICH, FRANCIS STEVEN SMIDLER,
and ANDRZEJ WYLEZINSKI

Appeal 2008-004649
Application 10/632,546
Technology Center 3600

Decided¹: June 2, 2009

Before WILLIAM F. PATE, III, LINDA E. HORNER, and
JOHN C. KERINS, *Administrative Patent Judges*.

KERINS, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Steven R. Miller et al. (Appellants) seek our review under 35 U.S.C. § 134 of the Examiner's final rejection of claims 1-15, the only claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We AFFIRM.

THE INVENTION

Appellants' claimed invention is to a vehicle suspension system that includes a frame, a pair of laterally spaced control arms pivotally supported by the frame at first pivotal connections, a knuckle connected to each of the control arms, a lateral leaf spring interconnected between the knuckles, and laterally spaced air springs arranged between the frame and one each of the control arms. (Appeal Br., Claims Appendix, claim 1). Claim 1, reproduced below, is representative of the claimed subject matter:

1. A vehicle suspension system comprising:
 - a frame;
 - a pair of laterally spaced apart control arms pivotally supported by said frame at first pivotal connections;
 - a knuckle connected to each of said control arms;
 - a lateral leaf spring interconnected between said knuckles; and
 - laterally spaced apart air springs, with one arranged between said frame and one of each of said control arms.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

| | | |
|-------------|--------------------|---------------|
| Merkle | US 4,493,481 | Jan. 15, 1985 |
| de Goncourt | US 4,854,606 | Aug. 8, 1989 |
| Pees | US 4,934,667 | Jun. 19, 1990 |
| Young | US 2004/0051262 A1 | Mar. 18, 2004 |

The Examiner has rejected:

- (i) claims 4 and 7 under 35 U.S.C. § 112, second paragraph, as being indefinite²;
- (ii) claims 1, 2, 4-9, and 11-15 under 35 U.S.C. § 103(a) as being unpatentable over de Goncourt in view of Pees;
- (iii) claims 1-4, 8-11, and 15 under 35 U.S.C. § 103(a) as being unpatentable over Young in view of Merkle.

ISSUES

The Examiner concluded that the recitation of a “lateral leaf air spring” in claim 4 and the recitation of “said valves” in claim 7 renders those claims indefinite. Appellants state that they disagree, and that the Examiner has a clear understanding of those claims. The issue here is whether Appellants have established that the Examiner erred in regarding the terms noted above render those claims indefinite.

The Examiner concluded that the combination of the teachings of de Goncourt and Pees renders obvious the subject matter of claims 1, 2, 4-9 and

² An indefiniteness rejection of claim 8 under 35 U.S.C. § 112, second paragraph, was withdrawn in the Examiner’s Answer in this appeal. (Answer 3).

11-15 on appeal. The Examiner further concluded that the combination of the teachings of Young and Merkle renders obvious the subject matter of claims 1-4, 8-11 and 15 on appeal.

Appellants urge that no motivation exists to combine the teachings of de Goncourt and Pees; that no motivation exists to combine the teachings of Young and Merkle; and that none of these references teaches or suggests a device or system employing a pair of knuckles.

The issues joined relative to these obviousness rejections are: have Appellants shown that the combination of de Goncourt and Pees is in error; that the combination of Young and Merkle is in error; or that the Examiner erred in finding that the de Goncourt patent and the Young patent each discloses a knuckle, as claimed?

FINDINGS OF FACT

The following enumerated findings of fact (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v. Quigg*, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

FF 1. Appellants provide no specific definition for the term “knuckle” in the Specification. (Spec., *passim*).

FF 2. Appellants’ Specification describes that the knuckles disclosed therein “rotate about the axis defined by the connections 20 and 28 in response to a steering input.” Thus, in Appellants’ preferred embodiment of the invention, the knuckles are steerable. (Spec, p. 4, ¶[13]).

FF 3. In the de Goncourt suspension elements (wheel supports) 15, 16 rotate about the joints where they are coupled to the control arms 13, 14 and

leaf spring 1, and the movement of elements 15, 16 appears to be in one plane only. (de Goncourt, Figs. 1, 3).

FF 4. As the suspension in de Goncourt flexes, wheel support element 15 rotates at pivotal connection 25. (de Goncourt, Figs. 4, 5, 6).

FF 5. The Young patent discloses a suspension in which elements 26 rotate about the joints where the elements are coupled to the control arms 36a, 36b and leaf spring 34, and the movement of elements 26 appears to be in one plane only. (Young, Figs. 4, 6, 12).

PRINCIPLES OF LAW

The primary purpose of the definiteness requirement is to ensure that the claims are written in such a way that they give notice to the public of the extent of the legal protection afforded by the patent, so that interested members of the public, e.g., competitors of the patent owner, can determine whether or not they infringe. That determination requires a construction of the claims according to the familiar canons of claim construction.

All Dental Prodx, LLC v. Advantage Dental Prods, Inc., 309 F.3d 774, 779-80 (Fed. Cir. 2002) (citation omitted).

Section 103 forbids issuance of a patent when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007).

The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary

considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). See also *KSR*, 550 U.S. at 407 (“While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls.”).

During examination, “claims … are to be given their broadest reasonable interpretation consistent with the specification, and … claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Bond*, 910 F.2d 831, 833 (Fed. Cir. 1990).

ANALYSIS

Claims 4 and 7--Indefiniteness under 35 U.S.C. § 112, ¶2

The Final Rejection dated September 11, 2006, from which this appeal is taken, included a rejection of claims 4, 7 and 8 under 35 U.S.C. § 112, second paragraph, as being indefinite. Appellants have properly sought review of those rejections. (Appeal Br. 4). The Examiner subsequently expressly withdrew the rejection of claim 8 on indefiniteness grounds. (Answer 3).

The language objected to in claim 4 is the phrase, “wherein said lateral leaf air spring includes opposing ends that support said knuckles at second pivotal connections.” Specifically, the presence of the term “air” as modifying the claimed lateral leaf spring is asserted to render the claim unclear. (See, Final Rejection 2; compare Examiner’s suggested language with claim language). Appellants contend that claim 4 is not indefinite, and that the Examiner should have entered an After Final Amendment that

would have deleted the term “air” from the claim, rendering moot the basis for the rejection.³

We are not persuaded that the Examiner erred in rejecting claim 4 as indefinite. The term “said lateral leaf air spring” does not find antecedent basis in any of claims 4, 2 and 1 (the chain of dependency), although claim 1 does recite a “lateral leaf spring”. (Appeal Br., Claims Appendix, claim 4). The Specification and drawings contain no disclosure of a “lateral leaf air spring”, and thus claim 4 as presented on appeal is not clear as to what is intended to be encompassed by the term “lateral leaf air spring”.

The language objected to in claim 7 is the phrase, “wherein said at least one valve is associated with each of said air springs with said valves being independently actuatable....” Specifically, the claim is asserted to be unclear in that the claim first calls for “at least one valve”, and subsequently refers to “said valves”. (Appeal Br., Claims Appendix, claim 7). It is unclear from this whether the claim requires more than one valve (“said valves”), or whether the claim scope would include a system having only one valve (“at least one valve” being inclusive of only one valve). (*See*, Final Rejection 2; *compare* Examiner’s suggested language *with* claim language). Appellants contend that claim 7 is not indefinite, and that the Examiner should have entered an After Final Amendment that would have changed the language of claim 7 to address the above-noted discrepancy.

³ The question as to whether the denial of entry of an amendment after final under 37 C.F.R. § 1.116 is or is not proper is a petitionable issue under 37 C.F.R. § 1.181, and is not an issue that may be decided on appeal. Appellants concede this, and indicate that they are willing to later amend the claims, should the rejection under 35 U.S.C. § 112, ¶2, be affirmed on appeal. (Reply Br. 2).

We are not persuaded that the Examiner erred in rejecting claim 7 as indefinite. It is not possible to determine whether the provision of one valve is within the scope of claim 7, or whether the claim scope requires two valves in the claimed system.

We will sustain the rejections of claims 4 and 7 under 35 U.S.C. § 112, ¶2.

Claims 1, 2, 4-9, and 11-15--Obviousness--de Goncourt/Pees

Appellants argue that claims 8 and 15 are separately patentable from the rest of the claims that are subject to this rejection.⁴ Claims 1, 2, 4-7, 9 and 11-14 are argued as a group, and we will select claim 1 as the representative claim for that group.

Appellants argue that the Examiner erred in rejecting claim 1 on the basis that the rejection fails to identify teachings and motivation in the prior art for combining the de Goncourt and Pees references (Appeal Br. 5-7; Reply Br. 3-4). Appellants further challenge the propriety of the rejection in asserting that the de Goncourt patent does not disclose the claimed “knuckles”. (Reply Br. 3).

The Supreme Court has held that a rigid and mandatory application of a “teaching, suggestion, motivation” (TSM) test is inconsistent with its precedent in assessing the obviousness or non-obviousness of a claimed invention. *KSR Int'l*, 550 U.S. at 419. Thus, to the extent that Appellants

⁴ Appellants do not present arguments for claims 8 and 15 under a separate heading or headings in the Appeal Brief, as is required by 37 C.F.R. § 41.37(c)(1)(vii). Notwithstanding, a separate argument for these claims is clearly presented, and Appellant does remedy this defect in presenting arguments for claims 8 and 15 under a separate heading in the Reply Brief.

assign error to the rejection as failing to meet the standards of a TSM test, we are constrained to reject such arguments.

The basis for the rejection of claim 1 is essentially that the modification of the de Goncourt system to include air spring dampers as taught in Pees, instead of the hydraulic shock absorbers of de Goncourt, is a simple substitution of one known element for another, yielding the predictable result that the damping in the system will take on the characteristics of air spring dampening, e.g., damping at the natural frequencies of the body and wheel axle. As such, we are not persuaded that the Examiner erred in combining the teachings of the de Goncourt and Pees patents in this manner.

Appellants also contend, in their Reply Brief, that the de Goncourt patent (and thus the combination of de Goncourt and Pees) “does not disclose knuckles as claimed.” (Reply Br. 3). Claim 1 does not structurally define the claimed knuckles, but merely recites that there is a knuckle connected to each of the control arms. (Appeal Br., Claims Appendix, claim 1). Appellants provide no specific definition for the term “knuckle” in the Specification. (FF 1).

Appellants urge that the term “knuckle” is a well known term of art in vehicle wheel technology, and that “[k]nuckles are inherently steerable structures for wheels on a vehicle axle.” (Reply Br. 3). Appellants, however, present no objective evidence in support of this contention. Appellants’ Specification describes that the knuckles disclosed therein “rotate about the axis defined by the connections 20 and 28 in response to a steering input.” (Spec., p. 4, ¶[13]). As such, in the preferred embodiment of Appellants’ invention, the knuckles are steerable. (FF 2). However, in

proceedings before the USPTO, claims are given their broadest reasonable interpretation consistent with the specification, and consistent with the understanding of those of ordinary skill in the art. *Bond*, 910 F.2d at 833. Limitations present in the specification are not to be imported into the claims, as a general rule. *See, In re Morris*, 127 F.3d 1048, 1054 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

The common and ordinary meaning of the term “knuckle” is “a joint between two parts allowing movement in one plane only”.⁵ THE RANDOM HOUSE DICTIONARY OF THE ENGLISH LANGUAGE, (2d Ed., Unabridged 1987). That meaning does not compel a finding that a knuckle is inherently steerable. The Examiner pointed out that elements (wheel supports) 15, 16 in the de Goncourt system do rotate about the joints (Answer 4) where they are coupled to the control arms 13, 14 and leaf spring 1, and the movement of elements 15, 16, appears to be in one plane only. (FF 3). Appellants do not contest this. Appellants instead base their arguments on embodiments of the invention to which instant claim 1 is not limited. We are thus not persuaded that the Examiner erred in rejecting claim 1 as being unpatentable over de Goncourt in view of Pees. We will sustain the rejection of claim 1, and of claims 2, 4-7, 9 and 11-14, which fall with claim 1.

Appellants, in arguing for the separate patentability of claims 8 and 15, repeat the contention that a “knuckle” is inherently steerable, according

⁵ This common dictionary definition of “knuckle” is consistent with that in KEITH LANE, AUTOMOTIVE A-Z, LANE'S COMPLETE DICTIONARY OF AUTOMOTIVE TERMS (Veloce Publishing 2002). Lane presents a definition of “knuckle” as “the area around a hinged object”. Lane presents a more detailed definition of a “steering knuckle” as “the assembly comprising the stub axle and steering arm”.

to the understanding of the term by persons of ordinary skill in the art. (Reply Br. 4-5). As discussed above, we do not find this argument, which is not supported by objective evidence, and promotes an overly restrictive meaning of the term, to be persuasive of error.

Appellants further contend that neither de Goncourt nor Pees discloses a rotatable knuckle. (Reply Br. 4). Claim 8 recites that the knuckles are to be rotatable about axes extending through first and second pivotal connections. The Examiner contends that the de Goncourt patent has axes extending through first and second pivotal connections (i.e., an axis extending through pivotal connections 34 and 25, and an axis extending through pivotal connections 35 and 26), and that wheel support elements 15, 16, are rotatable about those axes. (Answer 4). It can be seen in considering the illustrations in Figures 4, 5, and 6 of de Goncourt that, as the suspension flexes, wheel support element 15 rotates at pivotal connection 25. (FF 4).

While Appellants plainly view the rotation of the knuckles as being in a different form, in which the knuckles are steered, claims 8 and 15 are not specifically limited to a steering rotation. Appellants are thus again in the position of presenting arguments that are not commensurate with the scope of the rejected claims. We will sustain the rejection of claims 8 and 15 as unpatentable over de Goncourt in view of Pees.

Claims 1-4, 8-11 and 15--Obviousness--Young/Merkle

Appellants argue that claims 8 and 15 are separately patentable from the rest of the claims that are subject to this rejection. Claims 1-4 and 9-11 are argued as a group, and we will select claim 1 as the representative claim for that group.

Appellants, as in the response to the rejection in view of de Goncourt and Pees above, argue that the Examiner erred in rejecting claim 1 on the basis that the rejection fails to identify teachings and motivation in the prior art for combining the Young and Merkle references (Appeal Br. 7-8; Reply Br. 5-6). Appellants again further challenge the propriety of the rejection in asserting that the Young patent does not disclose the claimed “knuckles”. (Reply Br. 5).

As noted previously, the Supreme Court has held that a rigid and mandatory application of a “teaching, suggestion, motivation” (TSM) test is inconsistent with its precedent in assessing the obviousness or non-obviousness of a claimed invention. *KSR Int'l*, 550 U.S. at 419. Thus, to the extent that Appellants assign error to the rejection as failing to meet the standards of a TSM test, we are constrained to reject such arguments.

The basis for the rejection of claim 1 is essentially that the modification of the Young system to include air spring dampers as taught in Merkle, instead of the hydraulic shock absorbers of Young, is a simple substitution of one known element for another, yielding the predictable result that the damping in the system will take on the characteristics of air spring dampening, e.g., damping at the natural frequencies of the body and wheel axle. As such, we are not persuaded that the Examiner erred in combining the teachings of the Young and Merkle patents in this manner.

Appellants also contend, in their Reply Brief, that the Young patent (and thus the combination of Young and Merkle) “does not disclose knuckles as claimed.” (Reply Br. 5). We have previously concluded that the Appellants’ proffered interpretation of the claim term “knuckle” is more restrictive than is warranted in light of the evidence before us.

The Examiner pointed out that elements 26 in the Young system do rotate about the joints (Answer 5) where they are coupled to the control arms 36a, 36b and leaf spring 34, and the movement of elements 26 appears to be in one plane only. (FF 5). Appellants do not contest this. Appellants instead base their arguments on embodiments of the invention to which instant claim 1 is not limited. We are thus not persuaded that the Examiner erred in rejecting claim 1 as being unpatentable over Young in view of Merkle. We will sustain the rejection of claim 1, and of claims 2-4 and 9-11, which fall with claim 1.

Appellants, in arguing for the separate patentability of claims 8 and 15, repeat the contention that a “knuckle” is inherently steerable, according to the understanding of the term by persons of ordinary skill in the art. (Reply Br. 6). As discussed above, we do not find this argument, which is not supported by objective evidence, and promotes an overly restrictive meaning of the term, to be persuasive of error.

Appellants further contend that neither Young nor Merkle discloses a rotatable knuckle. (Reply Br. 6). Claim 8 recites that the knuckles are to be rotatable about axes extending through first and second pivotal connections. The Examiner contends that the Young patent has axes extending through first and second pivotal connections (i.e., an axis extending through pivotal connections 118a and 116a, and an axis extending through pivotal connections 118b and 118a), and that elements 26 are rotatable about those axes. (Answer 5). Appellants have not presented evidence or persuasive arguments that the Examiner’s findings in this respect are in error.

While Appellants plainly view the rotation of the knuckles as being in a different form, in which the knuckles are steered, claims 8 and 15 are not

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specifically limited to a steering rotation. Appellants are thus again in the position of presenting arguments that are not commensurate with the scope of the rejected claims. We will sustain the rejection of claims 8 and 15 as unpatentable over Young in view of Merkle.

CONCLUSION

Appellants have not established that reversible error exists in the rejection of claims 4 and 7 under 35 U.S.C. § 112, ¶2. Appellants have further not established that reversible error exists in the rejections of claims 1-15 under 35 U.S.C. § 103(a).

ORDER

The decision of the Examiner to reject claims 4 and 7 under 35 U.S.C. § 112, ¶2 is affirmed. The decision of the Examiner to reject claims 1-15 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

AFFIRMED

mls

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